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PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

REC'D 04 JAN 2005

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Applicant's or agent's file reference LAN223004P	FOR FURTHER ACTION	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416).
International Application No. PCT/AU2003/001622	International Filing Date (day/month/year) 5 December 2003	Priority Date (day/month/year) 5 December 2002
International Patent Classification (IPC) or national classification and IPC Int. Cl.⁷ B65F 1/00, 1/14; F16M 11/00, 11/20.		
Applicant ROEMAY PTY LTD et al.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 3 sheets, including this cover sheet.

☒ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 10 sheet(s).

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 30 June 2004	Date of completion of the report 9 December 2004
Name and mailing address of the IPEA/AU AUSTRALIAN PATENT OFFICE PO BOX 200, WODEN ACT 2606, AUSTRALIA E-mail address: pct@ipaaustralia.gov.au Facsimile No. (02) 6285 3929	Authorized Officer L. DESECAR Telephone No. (02) 6283 2381

I. Basis of the report**1. With regard to the elements of the international application:***

- ☐ the international application as originally filed.
- ☒ the description, pages 1, 6, 9-11 as originally filed,
pages , filed with the demand,
pages 2-5, 7-8 received on 15 November 2004 with the letter of 11 November 2004
- ☒ the claims, pages , as originally filed,
pages , as amended (together with any statement) under Article 19,
pages ; filed with the demand,
pages 12-14 received on 15 November 2004 with the letter of 11 November 2004
- ☒ the drawings, pages 1/6-3/6, 5/6-6/6 as originally filed,
pages received on with the letter of
pages 4/6 received on 15 November 2004 with the letter of 11 November 2004
- ☐ the sequence listing part of the description:
pages , as originally filed
pages , filed with the demand
pages , received on with the letter of

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages
- ☐ the claims, Nos.
- ☐ the drawings, sheets/fig.

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**1. Statement**

Novelty (N)	Claims 1-20	YES
	Claims	NO
Inventive step (IS)	Claims 1-20	YES
	Claims	NO
Industrial applicability (IA)	Claims 1-20	YES
	Claims	NO

2. Citations and explanations (Rule 70.7)

Claims 1-20 meet the criteria set out in the PCT Article 3(2)-(4), because none of the prior art documents teaches or fairly suggests a rotatable base assembly for a single waste container of the type having a pair of opposite wheels, the base assembly having a platform and a base, the platform being supported on the base for rotation about a substantially vertical axis, the platform having an upper surface, a front, a rear, an entry/ exit at the front of the platform through which the waste container may be moved wholly onto the platform or moved from the platform, and means for constraining the waste container on the platform, the constraining means including means on the platform for receiving the wheels of the waste container for locating the container on the platform, whereby the container supported on the platform may be rotated with the platform about the vertical axis.

near side, it is often difficult to move and manipulate the bin into a convenient position whilst ensuring that refuse or waste does not spill from the bin or the bin does not tip over. This thus creates a hygiene and safety problem. Manipulation of the bin is particularly difficult where the texture of the surface on which the bin is located is loose
 5 such as a gravel or earth surface as the wheels tend to dig into the surface.

Summary of the Invention

The present invention aims to provide in one aspect a rotatable base assembly for refuse
 10 or waste containers, which overcomes or alleviates one or more of the above disadvantages. The present invention in a further aspect aims to provide in combination a refuse or waste container and rotatable base assembly.

The present invention thus provides in a first aspect a rotatable base assembly for a single
 15 waste container of the type having a pair of opposite wheels by which said container may be wheeled when tipped, said base assembly having a platform and a base, said platform being supported on said base for rotation about a substantially vertical axis, said platform having an upper surface and a front and a rear, an entry/exit at the front of said platform through which a said waste container may be moved wholly onto said platform or moved
 20 from said platform, and means for constraining said waste container on said platform, said constraining means including means on said platform for receiving said wheels of said waste container for locating said container on said platform whereby a waste container supported on said platform may be rotated with said platform about said vertical axis.

25

Most preferably, the waste containers also have a chamber and manipulating handles located at an upper end of the chamber above the wheels. A lid is hinged to the chamber adjacent the manipulating handles for movement about an axis extending substantially parallel to the wheel axis and the lid is provided with handles remote from the hinge axis
 30 of the lid.

The upper surface of the platform comprises an upper substantially planar surface to

receive and support the base of a waste container. The constraining means may comprise one or more ribs or ridges extending upwardly relative to the planar surface.

In one configuration, ribs or ridges may be provided on opposite sides of the platform.
5 The locating means for the wheels may comprise recesses defined by the ribs or ridges into which the wheels may be moved to locate the waste container on the platform. The rib or ridges may converge towards each other from the front to the rear of the platform. The constraining means may also include a rib or ridge located at the rear of the platform which acts as a stop to the waste container. The front of the platform however most
10 preferably is free of a rib or ridge to enable the waste container to be readily moved onto the platform. The ribs or ridges may define a platform area substantially complementary to the cross section of the container at and including the wheels.

Pivot means between the platform and base suitably define the vertical axis about which
15 the platform may rotate relative to the base. The pivot means may comprise axle means adapted to be located in aligned apertures arranged centrally in the platform and base. The axle means in one form may comprise a pin. The pin may be inserted through the apertures in the platform and base and positively engage with the base. The pin may have a head end and a shank which is inserted through the apertures in the platform and
20 base. Preferably, the pin snap engages with the base to positively secure the platform to the base. For this purpose, the pin shank may have a leading barbed end for snap engagement with the base.

Preferably, bearing means are provided between the platform and base to support the
25 platform on the base. The bearing means are preferably located at a radial spacing from the centre of the platform and base. Preferably the bearing means are supported on one of the platform and base and cooperate with an annular track on the other of the platform or base. Most preferably, the bearing means are supported on the platform and cooperate with an annular track provided on the base.

30

The bearing means most suitably comprise a plurality of bearings. The bearings may in one form comprise rollers mounted for rotation about axes extending radially from the

centre of the platform or base. The rollers may have axles which engage with axle holders on the underside of the platform.

5 In another arrangement, the bearings may comprise ball bearings. The ball bearings may be supported in complementary part spherical recesses in the platform or base for cooperation with a track in the base or platform respectively.

10 In a further aspect, the present invention provides a rotatable base assembly for a waste container of the type having a waste chamber, wheels at the bottom of and on one side of said chamber and a lid hinged to said chamber for movement about a hinge axis on said one side of said chamber and above said wheels, said base assembly comprising a platform and a base for said platform, said platform being supported for rotational movement about a substantially vertical axis to said base, pivot means interconnecting said platform and said base and defining said vertical axis of rotation of said platform, 15 said platform having an entry/exit and being rotatable between a first position in which said waste container may be moved wholly onto said platform through said entry/exit to a position over said pivot means or moved from said platform through said entry/exit and a second position in which said container and platform are rotated about said vertical axis such that said container is constrained from movement to or from said platform and said 20 platform including means for locating said waste container on said platform, said locating means including means for receiving said wheels of said container.

Most preferably, the second position is approximately 180° from the first position however the second position may be at any angular position relative to the first position. 25 The second position may also be in either rotational direction from the first position.

The waste container may be constrained from movement to or from the platform by ribs or ridges on the platform. The platform however may be alternatively formed to constrain movement of the waste container from the platform. The entry/exit region may 30 be bounded at least on opposite sides by the ribs or ridges.

Brief Description of the Drawings

In order that the invention may be more readily understood and put into practical effect,
5 reference will now be made to the accompanying drawings which illustrate a preferred embodiment of the invention and wherein:-

- Fig. 1 is a perspective view of a rotatable base assembly for refuse or waste containers;
Fig. 2 is an exploded perspective view of the rotatable base assembly of Fig. 1;
10 Fig. 3 is a plan view of the rotatable base assembly of Fig. 1;
Fig. 4 is a sectional view along line A-A of Fig. 3;
Figs. 5 and 6 are plan views of the platform and base of the base assembly;
Figs. 7 to 10 illustrate the manner in which the rotatable base assembly may be used in combination with a waste container;
15 Fig. 11 is a perspective view of an alternative form of rotatable base assembly according to the invention carrying a waste container;
Fig. 12 is a plan view showing the relationship between the waste container and rotatable base assembly of Fig. 11; and
Fig. 13 illustrates an alternative embodiment of the invention.

20

Detailed Description of the Preferred Embodiments

Referring to the drawings and firstly to Figs. 1 to 6, there is illustrated a rotatable base assembly 10 for refuse or waste containers according to an embodiment of the present
25 invention, the rotatable base assembly 10 having a platform 11 on which a refuse container may seat and a base 12 upon which the platform 11 is supported for rotation about a substantially vertical axis.

30

The hub 30 is centrally apertured at 33 to receive the barbed end 27 of the axle pin 26 which may snap-lock into the aperture 33 to positively retain the platform 11 to the base 12 but permit rotational movement of the platform 11 relative to the base 12 about a substantially vertical axis defined by the axle pin 26.

5

When the platform 11 is secured to the base 12, the wheels 21 are aligned with and supported on the track 28 to provide support to the platform 11 from the underside with the wheels 21 running along the track 28 with rotation of the platform 11 relative to the base 12 in opposite directions.

10

To prevent or reduce the risks of dirt and dust reaching the axle pin 26 and thereby restricting rotation of the platform 11 relative to the base 12, the platform 11 may be provided with a downwardly extending annular rib 34 coaxial with the opening 25 and the platform 11 is provided with a pair of spaced apart upwardly extending annular ribs 35 coaxial with the opening 33 (see Fig. 4). When the platform 11 is supported to the base 12, the rib 34 extends downwardly to be located between the respective upwardly extending ribs 35 to present a series of cooperating barriers to minimise the risks of dust, dirt or other materials fouling the axle pin 26.

20 The rotatable base assembly 10 is particularly suited to use with a waste container 36 (see Figs. 7 to 10) of the type known as a wheelie bin which is formed of plastics and which has a generally rectangular elongated chamber 37 provided with a pair of wheels 38 mounted on a horizontal axle 39 extending along one side of the bottom of the chamber 37 and manipulating handles 40 at the upper end of the chamber 37 above the wheels 38.

25 The container 36 additionally includes a lid 41 which is hingedly connected to top of the chamber 37 at or adjacent the handles 40 for movement about an axis extending substantially parallel to wheel axle 39. The lid 41 additionally include a pair of integrally formed handles 42 which facilitate lifting of the lid 41 and deposit of waste into the chamber 37, the handles 42 being located on the side of the lid 41 opposite its
30 hinge axis.

As shown in Figs. 7 to 10, the assembled rotatable base assembly 10 is positioned in a

substantially horizontal attitude on the ground where the waste container 36 is usually located. Where the waste container 36 is to be placed onto the platform 11 of the base assembly 10, the platform 11 is rotated such that the open front 17 thereof is directed outwardly. The waste container 36 is then wheeled into a position in alignment with the base assembly 10 and tipped rearwardly about its wheel axle 39 such that its leading end is raised and can be moved through the open front 17 onto the platform 11 as illustrated in Fig. 7. Further forward force applied to the container 36 in the direction B will cause the bottom 43 of the container 36 to seat substantially flat on the platform 11 which then slides forwardly to the position of Fig. 8 in which the container 36 is fully supported on the platform 11 with the wheels 38 locating within the recesses 18 which prevents further forward movement of the container 36. The container 36 may be guided onto the platform 11 by contacting the ribs or ridges 14 and the leading end of the container 36 may contact the ridge 16 at the front of the platform 11 which acts as a stop.

15 The container 36 and platform 11 may then be rotated relative to the base 12 (in this case clockwise) from the position of Fig. 8, through the position of Fig. 9 to the position of Fig. 10 where the container 36 and platform 11 are in a position approximately 180° from the position of Fig. 8. In the Fig. 10 position, the handles 42 of the lid 41 are located on the near side adjacent to the user and are thus readily accessible enabling them to be grasped to lift the lid 41 for deposit of waste 44 into the chamber 37 as shown.

When the container 36 is full and heavy and/or it is time to place the container 36 out for emptying, the container 36 and platform 11 are rotated back to the position of Fig. 8 where the gripping handles 40 are adjacent the user. The gripping handles 40 may then be grasped by the user, the container 36 slid rearwardly in the direction C in Fig. 8 and pivoted downwardly to the position of Fig. 7 such that the container 36 is supported on its wheels 38. The container 36 may then be wheeled to a position for collection.

Referring now to Figs. 11 and 12, there is illustrated a further form of rotatable base assembly 45 according to the present invention, in Fig. 11 showing in combination with a waste container 36. The base assembly 45 includes a base 46 similar to the base 12 and a platform 47 supported on the base 46 for rotation about a substantially vertical axis

Claims

1. A rotatable base assembly for a single waste container of the type having a pair of opposite wheels by which said container may be wheeled when tipped, said base
5 assembly having a platform and a base, said platform being supported on said base for rotation about a substantially vertical axis, said platform having an upper surface and a front and a rear, an entry/exit at the front of said platform through which a said waste container may be moved wholly onto said platform or moved from said platform, and
10 means for constraining said waste container on said platform, said constraining means including means on said platform for receiving said wheels of said waste container for locating said container on said platform whereby a waste container supported on said platform may be rotated with said platform about said vertical axis.
2. A rotatable base assembly as claimed in claim 1 wherein said platform upper
15 surface comprises a substantially planar surface upon which the bottom of a waste container may seat and wherein said constraining means includes one or more ribs or ridges extending upwardly relative to said planar surface.
3. A rotatable base assembly as claimed in claim 2 wherein said ribs or ridges are
20 provided on opposite sides of the platform.
4. A rotatable base assembly as claimed in claim 3 wherein said wheel receiving means comprise recesses defined by said ribs or ridges .
- 25 5. A rotatable base assembly as claimed in claim 3 wherein said ribs or ridges converge towards each other from the front to the rear of the platform.
6. A rotatable base assembly as claimed in any one of claims 2 to 5 wherein said
30 constraining means include a rib or ridge located at the rear of said platform to act as a stop to said waste container.
7. A rotatable base assembly as claimed in claim 5 or claim 6 wherein said ribs or

ridges define a platform area substantially complementary to the cross section of the container and wheels.

8. A rotatable base assembly according to any one of the preceding claims and
5 including pivot means between the platform and base and defining said vertical axis.
9. A rotatable base assembly as claimed in claim 8 wherein said pivot means
comprise axle means located in aligned apertures arranged centrally in the platform and
base.
10. A rotatable base assembly as claimed in claim 9 wherein said axle means
comprises a pin which positively connects said platform to said base.
11. A rotatable base assembly as claimed in any one of the preceding claims and
15 including bearing means between said platform and base to support the platform on the
base.
12. A rotatable base assembly as claimed in claim 11 wherein said bearing means are
radially spaced from the centre of the platform and base.
13. A rotatable base assembly as claimed in claim 11 or claim 12 wherein said
bearing means are supported on one of the platform and base and cooperate with an
annular track on the other of the platform or base.
14. A rotatable base assembly as claimed in any one of claims 11 to 13 wherein said
25 bearing means comprise a plurality of bearings, said bearings comprising rollers mounted
for rotation about axes extending radially from the centre of the platform and base.
15. A rotatable base assembly as claimed in any one of claims 11 to 13 wherein said
30 bearing means comprise ball bearings.
16. A rotatable base assembly for a waste container of the type having a waste

chamber, wheels at the bottom of and on one side of said chamber and a lid hinged to said chamber for movement about a hinge axis on said one side of said chamber and above said wheels, said base assembly comprising a platform and a base for said platform, said platform being supported for rotational movement about a substantially vertical axis to said base, pivot means interconnecting said platform and said base and defining said vertical axis of rotation of said platform, said platform having an entry/exit and being rotatable between a first position in which said waste container may be moved wholly onto said platform through said entry/exit to a position over said pivot means or moved from said platform through said entry/exit and a second position in which said container and platform are rotated about said vertical axis such that said container is constrained from movement to or from said platform and said platform including means for locating said waste container on said platform, said locating means including means for receiving said wheels of said container.

15 17. A rotatable base assembly as claimed in claim 16 wherein said second position is approximately 180° from the first position.

18. A rotatable base assembly as claimed in claim 16 or claim 17 wherein said container is located by ribs or ridges on said platform.

20 19. A rotatable base assembly as claimed in claim 18 wherein said entry/exit is bounded at least on opposite sides by said ribs or ridges.

25 20. A rotatable base assembly as claimed in claim 19 wherein said ribs or ridges define recesses on opposite sides of said platform for receiving said wheels of said container.

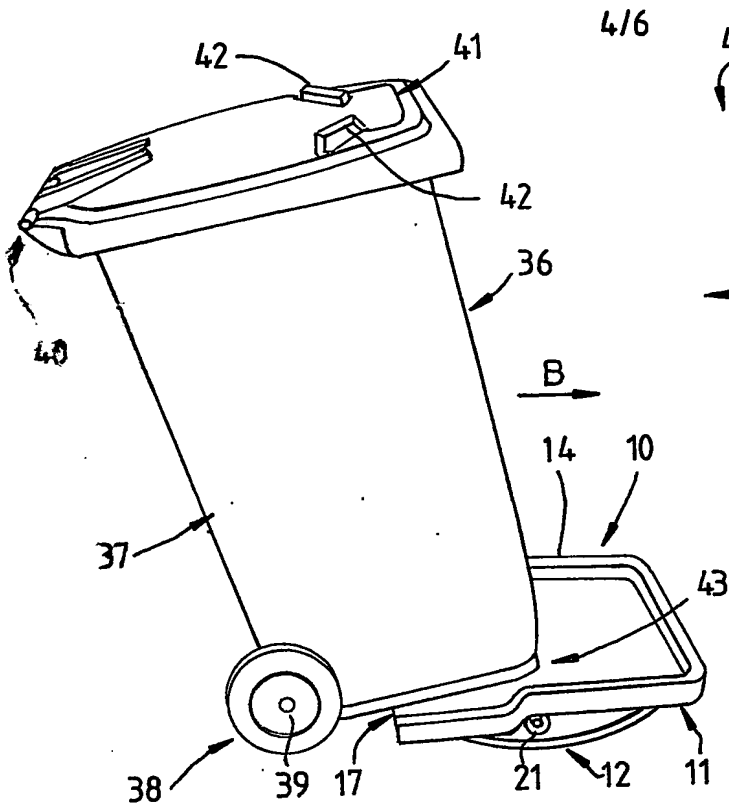


FIG. 7

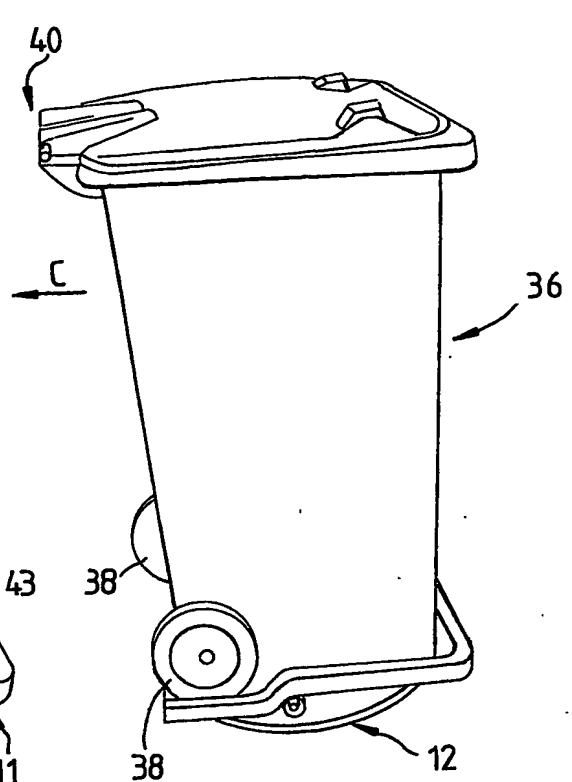


FIG. 8

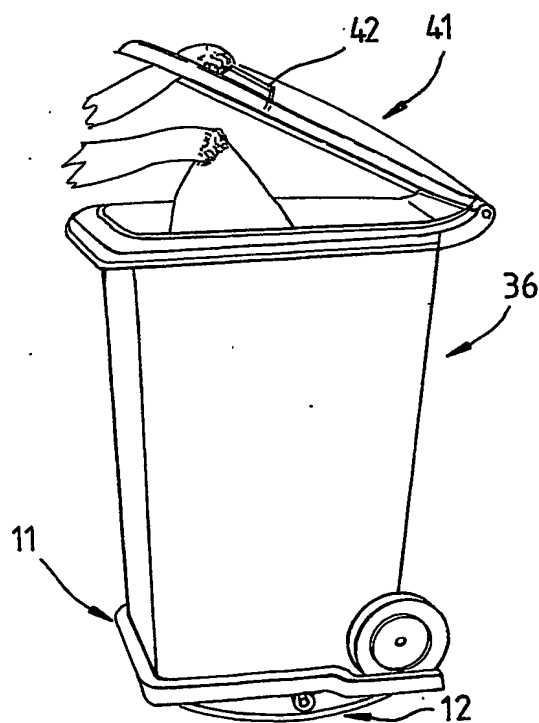


FIG. 10

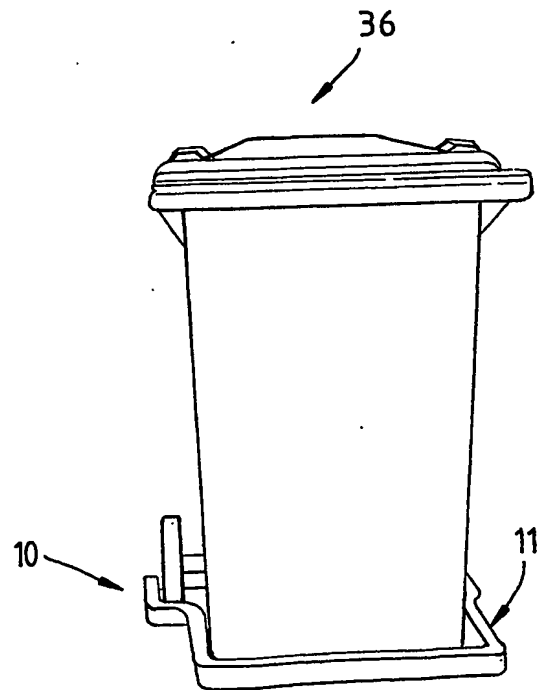


FIG. 9